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The University of Southern Mississippi

Do Parenting Practices Mediate the Relation Between
Maternal Depression and Child Adaptive Behaviors?

An Examination of Outcomes for Children from Varying Socioeconomic Status Groups

by

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Abstract

Through a moderated mediational model, the current study examined whether parenting practices mediate the relation between maternal depression and adaptive behaviors in preschoolers and whether that mediation is moderated by socioeconomic status (SES). Data were collected from parent and teacher report questionnaires on 117 preschool children [54 attending Head Start and 63 attending other (non-Head Start) childcare centers]. It was hypothesized that parenting practices would mediate the relation between maternal depression and child adaptive behavior (positive parenting leading to higher adaptive behavior, negative parenting leading to lower adaptive behavior) and that the relation between parenting and adaptive behavior would be further impacted (i.e., moderated) by SES. Although the hypotheses were not fully supported, findings did show that maternal depression was related to some aspects of parenting and that some aspects of parenting practices were related to child adaptive behaviors.

Key Terms: maternal depression, parenting practices, adaptive behavior, socioeconomic status.

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Do Parenting Practices Mediate the Relation Between Maternal Depression and Child Adaptive Behaviors?

An Examination of Outcomes for Children from Varying Socioeconomic Status Groups

Parenting affects everyone in some way. Whether or not someone has or plans to have children, he or she was parented at some point in their life. It is well-documented that parenting has long-lasting impacts on the lives of children. Because of the importance of parenting, I was interested in learning about the relation of parenting practices and maternal psychopathology on child behaviors and how that relation may or may not change across socioeconomic status.

The main constructs examined in the current study are maternal depression, parenting practices, adaptive behaviors, and socioeconomic status. Maternal depression refers to the degree to which the mother of the child has symptoms of depression, including feelings of sadness or loneliness, negative or self-defeating thoughts, crying spells, etc. Parenting practices refer to either negative parenting practices in which parents engage in unproductive and/or potentially harmful styles of parenting, as well as positive parenting practices in which parents provide appropriate reinforcement to children and are highly involved with the children. Adaptive behavior refers to the social skills, adaptability to the environment, flexibility, and functional communication skills of the child. Finally, socioeconomic status refers to the income level and social position of the child's family based on factors such as parental education and occupation.

When choosing my topic, I was influenced by a research article and a previous thesis. First, Barry, Dunlap, Lochman, and Wells (2009) reported a study of the association between inconsistent discipline and negative parenting styles as they mediate

the relation between maternal distress (depression, anxiety/somatization) and child disruptive behaviors (aggression, attention problems) among school-aged boys who were screened as moderately to highly aggressive. Specifically, I was interested in their finding that higher levels of maternal distress were related to higher levels of negative parenting (inconsistent discipline) and higher levels of child disruptive behaviors. This study showed the importance of consistency of discipline and points to the potential importance of the use of positive parenting practices in creating healthy parent-child relationships and adaptive outcomes for children. Specifically, if higher use of negative parenting practices was related to negative outcomes might also lower use of negative parenting—as well as higher use of positive parenting practices—relate to more positive, adaptive outcomes in children?

Second, Khandker's (2009) honors thesis, "Examining parental involvement and supervision as moderators in the relation between attention-deficit/hyperactivity disorder symptoms and adaptive behavior in children," reported research that looked specifically at child adaptive behaviors, which really spiked my interest. She found that parental involvement/supervision was positively correlated with both ADHD symptoms and adaptive behaviors among typically-developing school-aged children. Thus, although not the main focus of her work, her findings did indicate that higher levels of positive parenting practices appear to be related to more adaptive outcomes in children.

The purpose of the current study was to build upon the previous literature to examine the complex interrelation among maternal depression, parenting practices, and child adaptive behaviors as well as to determine how socioeconomic status may impact that relation. This study is important in that it seeks to unravel more about the specific

processes in which parenting practices and parental mental health relate to positive outcomes in children. Background information on these variables and how they relate is further described in the literature review below.

Literature Review

Parental Psychopathology

Parenting is a fairly common topic of research, particularly in the child literature. There are vast amounts of literature on parenting and its effects on child outcomes. In the field of child clinical psychology, more and more research has emerged that specifically focuses on how the parent's psychopathology affects the child. Much of the research on parental psychopathology and child outcomes focuses on symptoms that are fairly commonplace among adults, such as depression, anxiety, and somatization. For example, on this topic, Barry, Dunlap, Cotten, Lochman, and Wells (2005) examined the relation between maternal distress and behavior problems in at-risk boys coming from varied levels of socioeconomic status (SES). Barry et al. (2005) found that lower SES was significantly related to child disruptive behavior. In addition, maternal distress (depression, anxiety/somatization) was significantly associated with disruptive behaviors, particularly attention problems, even after controlling for SES and maternal stress. It was concluded that one possibility was that a mother's distress could be caused by a stressful home environment which would also trigger disruptive behaviors in the child. Notably, it is important to know that a mother's psychological health relates to—and possibly directly impacts— her child's behavior.

To expand on these findings, Barry et al. (2009) further studied the association between maternal distress and child disruptive behaviors among at-risk school-aged boys.

Specifically, they were looking to see if negative parenting styles, particularly inconsistent discipline, mediated the relation between maternal distress (i.e., depression, anxiety/somatization) and child disruptive behaviors (i.e., aggression, attention problems). Barry et al. (2009) found that lower SES, higher parenting stress, and higher maternal distress were related to higher levels of child attention problems and aggression. Similarly, higher levels of maternal distress were related to higher levels of inconsistent discipline. In fact, inconsistent discipline partially mediated the relation between maternal distress and children's aggression, underscoring the potential importance of parenting practices in explaining the relation between a parent and child's mental health.

Contributing further to the literature, Shelton and Harold (2008) assessed the relation between parental depressive symptoms, relationship insecurity, parental conflict, negative parenting, and children's psychological adjustment. They aimed to examine the complex relation between parental psychopathology, parental relationships, and children's psychological adjustment. Through their investigation, Shelton and Harold (2008) found that both maternal and paternal depressive symptoms were associated with insecure adult relationships, which was then connected with an increase of parental conflict and child internalizing symptoms and externalizing problems. Similarly, Tompson, Pierre, Boger, McKowen, Chan, and Freed (2009) studied the associations between youth psychopathology, maternal depression, and maternal expressed emotion (interpersonal practices that influence the relationship between the mother and child) throughout the child's lifetime. There were various interesting outcomes in this study. Primarily, the researchers found that having a history of depression, for mothers, was associated with higher levels of maternal expressed emotion. Furthermore, for mothers

with both a history of depression and higher levels of maternal expressed emotion, children reported having higher levels of their own depressive symptoms. Importantly, Tompson, et al. (2009) further document that maternal depression is a major risk factor in youth psychopathology. Their study also showed that expressed emotion—which involves negative interpersonal practices that impact parenting—exacerbated the child’s risk.

Interestingly, fewer studies have been conducted to examine how children affect their parent’s mental health. However, some important work has been done in this area. Gross, Shaw, and Moilanen (2008) studied how child behavior may contribute to parental well-being, especially maternal and paternal depressive symptoms. They found three main points. First, maternal depressive symptoms decreased between child ages 2 to 4 years, whereas paternal depressive symptoms did not change during that time period. Second, at child age 2 years, noncompliance was significantly related to maternal depressive symptoms and partially related to paternal depressive symptoms. However, at child age 4 years, as internalizing behaviors increased among children, so did depressive symptoms in both parents. Similarly, Gross, Shaw, Burwell and Nagin (2009) attempted to trace the development of child behavior problems and maternal depression from early childhood to adolescence. They found that higher levels of child noncompliance were associated continually with higher levels of maternal depressive symptoms. These higher levels of maternal depressive symptoms were then, in turn, related to more antisocial behavior in the boys during adolescence. This study emphasized the importance of parent-child interactions throughout development. Based on these studies’ findings, it is important to recognize that the parent-child relationship most likely has bi-directional

associations when considering parental depressive symptoms and early childhood behavior—a point that should be considered when interpreting the findings of cross-sectional studies that capture parental and child functioning at one time point.

Parenting Practices

Although parenting and child outcomes are widely studied, much of the literature has focused on broad parenting styles (e.g., authoritarian versus permissive), and fewer studies have been conducted to investigate specific parenting practices and how they affect child outcomes. Khandker (2009) considered specific parenting practices in her examination of the association between attention-deficit/hyperactivity disorder (ADHD) symptoms and adaptive behaviors as they were moderated by the positive parenting practices of parental involvement and supervision. She found that parental involvement/supervision was positively correlated with both ADHD symptoms and adaptive behaviors (e.g., child social skills, adaptability, flexibility and communication skills). The positive association with ADHD symptoms may have been due to the need for higher involvement and engagement from parents in compensation for children's ADHD symptoms. Interestingly, Khandker found an interaction such that, when ADHD symptoms were high, home living skills were highest when children also had high levels of supervision. As such, her findings underscored the importance of positive parenting practices for adaptive behavior, including as a possible protective factor when other risk factors (e.g., ADHD symptoms) for poor adaptive outcomes are present. She also found that, when ADHD symptoms were low, home living skills were highest when children also had lower levels of supervision—most likely because these children did not require as much oversight as would children with ADHD symptoms. These findings are relevant

to the literature because it showed the importance of consistent parental involvement/supervision, but also that the need for such parenting practices will likely vary under certain conditions and will likely relate differentially to child outcomes accordingly.

Consistent with much of the research on parenting practices, Combs-Ronto, Olson, Lunkenheimer, and Sameroff (2009) examined the associations between negative maternal parenting and child disruptive behaviors during the transition from preschool to grade-school years. They found the risk of negative parenting increased with more child disruptive behavior and that the risk mechanisms are similar for both girls and boys. On another note, Lansford (2010) reviewed the literature to assess the differences in how corporal punishment is perceived and its effectiveness across cultures. Upon exploring numerous sources, Lansford (2010) found that the relation between corporal punishment and child adjustment varies across cultural group, because parents and children in different groups interpret the effectiveness and appropriateness of it differently. It is important to recognize that few beneficial outcomes are reached using corporal punishment, but this association can be weakened when used in different cultural groups. To the extent that these differences would be found for different *sociocultural* groups, such findings may also apply to various SES groups within one culture, which is a focus of the current study.

Broadening the literature on parenting practices, Brotman et al. (2011) examined the effectiveness of *ParentCorps*, a family intervention, among 4 year-old children in an urban school district. After the intervention, there were significant improvements in parenting practices, as well as better teacher reports on child behavior, demonstrating the

effectiveness of this particular type of family intervention (i.e., one that focuses on parenting practices). The benefits improved even more with the number of intervention sessions attended. The findings of this study suggest that this type of family intervention can be used in an after-school setting and both improve parenting practices as well as child behavior. However, further research about the complex interrelation of these variables, such as the focus of the current study, can further inform such intervention efforts.

Child Adaptive Behaviors

Of the constructs of interest for the current study, the least amount of research has been done on child adaptive behaviors. Adaptive behaviors refer to the degree to which the child can comfortably and easily adapt to new environments and situations. In her study, Allen-Meares (2008) researched the status of adaptive behavior assessments and examined the instruments to see if they include multicultural sensitivity in school age children. She found that the multicultural component is not yet standardized in many of the adaptive behavior scales. Some had a small section of ethnic and racial information, but most did not. This is important because it shows us that if researchers aim to study adaptive behaviors across cultures, they should be careful about the choice of measure. It also implies that adaptive behavior will vary across cultures—and possibly across various SES groups within one culture. Such an expectation is tested within the current study.

Also on the topic of adaptive behaviors, Becker-Weidman (2009) investigated a history of childhood maltreatment within the parent-child relationship and how that may develop into other deficits. He found that the adopted and foster children showed developmental delays in various areas. Specifically, the average score in adaptive

behavior for the children in this study was a developmental age of 4.4 years, whereas the chronological age was 9.9 years. Being the first descriptive study of its kind, Becker-Weidman's (2009) study made an important contribution to the literature. It is vital to recognize the crucial role parenting plays in contributing to adopted and foster children's adaptive behaviors as well as biological children's adaptive behaviors.

Relating to adaptive behaviors, Pungello, Iruka, Dotterer, Mills-Koonce, and Reznick (2009) examined the associations between SES, race, maternal sensitivity, and maternal negative-intrusive behaviors and language development in children. Pungello et al. (2009) reported that SES, race, maternal sensitivity, and negative intrusiveness were all significant predictors of language outcomes in children. These findings added to the literature by examining the links between SES and race over time with two types of communication abilities and maternal sensitivity and negative intrusive parenting with language development, as well as exploring the possible effects of SES and race on parenting behaviors and language development. Pungello et al.'s findings showed that maternal factors (both mental health and parenting practices) relate to child adaptive functioning (i.e., in this case, language outcomes) and that demographic factors—such as race and SES—may further impact that relation. The current study built upon this literature base by examining broader parenting practices and broader adaptive functioning among children.

Current Study and Hypotheses

Whereas much of the literature on maternal depression and child behavior has focused on negative child outcomes (e.g., behavior problems), the current study examined adaptive outcomes. The current study adds to the literature by examining a

more complex question than many of the previously reviewed studies in an effort to tie together multiple findings in the literature into one model. Specifically, through a moderated mediational model, the current study examined whether parenting practices (positive or negative) mediate the relation between maternal depression and adaptive behaviors in preschoolers and whether that mediation is moderated by SES. The current study was based on literature supporting the idea that different parenting practices may relate to different outcomes for children as SES varies.

First, it was hypothesized that higher levels of maternal depression would be related to lower levels of adaptive behaviors in preschoolers. Second, it was hypothesized that the relation between maternal depression and child adaptive behaviors would be mediated by both positive and negative parenting practices. Specifically, it was expected that higher levels of maternal positive parenting practices would be related to lower levels of maternal depression and higher levels of child adaptive behaviors and at least partially explain the relation between maternal depression and adaptive behaviors. In contrast, it was expected that higher levels of negative parenting practices would be related to higher levels of maternal depression and lower levels of child adaptive behaviors. Third, it was hypothesized that these mediations would be moderated by SES, specifically moderating the path between parenting practices and child adaptive behavior. Specifically, it was expected that the relation between parenting practices and child adaptive behavior would be strongest for families with a lower SES, whereas that relation would be attenuated for families with a higher SES. Thus, the current study examined a moderated mediational model of the variables of interest.

Method

Participants

A total of 117 preschoolers, along with one of their parents or primary caregivers and one of their preschool teachers, were the participants in the study. Of the child participants, 54 children attended Head Start and 63 children attended other (non Head Start) childcare centers in Hattiesburg, Mississippi. A total of 61 participants were males and 56 were females. Their ages ranged from 3 to 6 years ($M = 4.03$, $SD = .73$). The race distribution was 46.2% African-American, 49.6% Caucasian, 1.7% Asian-American, 0.9% classified as other, and 1.7% did not respond to this item.

Measures

Brief Symptom Inventory (BSI; Derogatis, 1991). This 53-item self-report scale yields nine scores of adult psychopathology: Somatization, Depression, Anxiety, Obsessive Compulsive, Interpersonal Sensitivity, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. In addition, a Global Severity Index can be computed to determine a person's overall level of psychological distress. The BSI is a shortened version of the Symptom Checklist-90-Revised (SCL-90-R) by the same authors and is written at a 6th grade reading level. The SCL-90-R has demonstrated good psychometric properties. The internal consistency coefficient alpha was .85 and test-retest reliability coefficient was .80 for the depression scale. In an independent study of psychiatric in- and outpatients, the BSI demonstrated good reliability. For the current study, the BSI allowed the mothers to report their own psychopathology, including a depression scale, which was the focus of the current study and served as the predictor variable.

Alabama Parenting Questionnaires-Preschool Revision (APQ-PR; Clerkin, Marks, Policaro, & Halperin, 2007; Frick, 1991; Shelton, Frick, & Wootton, 1996). This adapted measure is based on the Alabama Parenting Questionnaire (Frick, 1991; Shelton et al., 1996), which was designed to measure the aspects of parenting that are associated with disruptive behavior in school-age children. The original APQ consists of 42 items that make up five subscales: poor parental monitoring and supervision, inconsistent discipline, corporal punishment, positive parenting, and parental involvement. Some of the 42 items measured other discipline practices that did not load on one of the five scales. Parents indicate on a 5-point Likert scale, ranging from 1-*Never* to 5-*Always*, the frequency of using various parenting practices. Shelton et al. reported adequate internal consistency for involvement, positive parenting, and inconsistent discipline (alphas ranging from .67 to .80) but low internal consistency for corporal punishment ($\alpha = .46$). Moreover, the Positive Parenting and Involvement scales were highly correlated ($r = .85$); therefore, these may not be measuring unique constructs.

Clerkin et al. (2007) adapted the original measure to create the Alabama Parenting Questionnaire – Preschool Revision (APQ-PR) by eliminating 17 items (10 items deemed inappropriate for preschool-aged children and 7 items due to loadings less than .40 on all factors). The APQ-PR revealed a three-factor solution: Positive Parenting (based on items from the APQ Positive Involvement and Positive Parenting scales), Negative/Inconsistent Parenting (based on items from the APQ Poor Monitoring/Supervision and Inconsistent Discipline scales), and Punitive Parenting (based on items from the Corporal Punishment scale with the inclusion of two items, “You ignore your child when he/she is misbehaving” and “You yell or scream at your child when he/she has done something

wrong,” which were other discipline items that did not load on a subscale in the original APQ). For the current study, the Positive Parenting, Negative/Inconsistent Parenting, and Punitive Parenting scales from the APQ-PR were used. Further, the Negative/Inconsistent Parenting and Punitive Parenting scales were z-scored and summed to form a composite of Negative Parenting that was used in subsequent analyses. These measures of positive parenting and negative parenting were used as mediators in the current study.

Behavioral Assessment System for Children-Second Edition—Parent Rating Scale (BASC-2-PRS) and Teacher Rating Scale (BASC-2-TRS; Reynolds & Kamphaus, 2004). The BASC-2 is a multi-dimensional assessment system that measures both adaptive and problem behaviors of children both in school (BASC-TRS) and in home settings (BASC-PRS). The BASC-PRS (134 items) and the BASC-TRS (100 items) for preschoolers aged 2 to 5 were used in the current study to obtain measures of child behavior in two contexts (home and school). The items were rated by parents and teachers on a 4-point scale ranging from *Never* to *Almost Always*. Both forms yield eight clinical scores (Aggression, Anxiety, Attention Problems, Atypicality, Depression, Hyperactivity, Somatization, and Withdrawal). Also, the adaptive scores of Activities of Daily Living (parent only), Adaptability, Functional Communication, and Social Skills are available. The scales are further combined into four composite scores (Internalizing Problems, Externalizing Problems, Adaptive Skills, and the Behavioral Symptoms Index). The BASC-2 has demonstrated good reliability. Reynolds and Kamphaus (2004) reported internal consistencies for the composites, with alpha coefficients ranging from .87 to .96 (BASC-TRS) and .85 to .93 (BASC-PRS). Alpha coefficients for the subscales range from .75 to .93 (BASC-TRS) and .77 to .87 (BASC-PRS). Median inter-rater reliabilities have been

reported as .74 and .65 on the BASC-TRS for the composites and subscales, respectively. On the BASC-PRS, median inter-rater reliabilities have been reported as .71 and .74 for the composites and subscales, respectively.

The Adaptive Behavior composite of the adaptive scales from the BASC-2 were the focus of the current study and served as outcome variables. Both the parent- and teacher-report include adaptability, social skills, and functional communication. The parent-report also included activities of daily living. Within the current sample, parent and teacher reports of child adaptive behaviors were significantly but moderately correlated, $r = .45$, $p = .001$. Given the focus of the current study was adaptive behaviors in both the home and school setting, parent and teacher reports of child adaptive behaviors were considered separately when testing the hypotheses.

Demographic Questionnaire. A demographic questionnaire was used to obtain socioeconomic and demographic information about the child and his/her family. Among other information, parents were required to report on their marital status, highest level of education, place of employment and occupation/job position, which were used to calculate a socioeconomic status score using the Hollingshead Four Factor Index of Social Status (Hollingshead, 1975)—a measure of SES, which was used as the moderator variable in the current study.

Procedure

The current study used a portion of a doctoral dissertation dataset of preschool children from the community, which I assisted in collecting from 2009 to 2011. When collecting the data, we began by distributing consent forms to parents at local preschool and Head Start centers. Upon receiving consent from the parents to participate in the

study, folders containing the questionnaires were sent home with the children. Among other measures for the larger study, parents completed the demographic form, BSI, APQ-PR, and BASC-2-PRS. Next, we gathered consent from the child's teacher to participate in the study. Folders containing teacher questionnaires were then given to each of the teachers that agreed to participate. Among other measures for the larger study, teachers completed the BASC-2-TRS. After receiving the questionnaires from both the parents and teachers, the items were scored to form composites and data were entered into an SPSS database to analyze the data to assess our findings.

Results

Descriptive statistics for the variables of interest are presented in Table 1. Prior to conducting the analyses to test the hypotheses, age, gender, and race were correlated with the outcome variables (child adaptive behaviors) to determine if these demographic variables needed to be controlled in subsequent analyses because they contributed significant variance to the outcome variable of interest (i.e., child adaptive behaviors). Notably, both categorical variables—gender and race—were dichotomized, yielding the correlation coefficients meaningful and interpretable. The correlations between child gender and child adaptive behaviors (parent report), $r = .22$, $p = .02$, and between child gender and child adaptive behaviors (teacher report), $r = .31$, $p = .001$, were significant. The correlations between child age and child adaptive behaviors (parent report), $r = -.13$, $p = .16$, between child age and child adaptive behaviors (teacher report), $r = .06$, $p = .49$, between child ethnicity and child adaptive behaviors (parent report), $r = -.04$, $p = .69$, and between child ethnicity and child adaptive behaviors (teacher report), $r = -.04$, $p = .64$, were not significant. Therefore, only child gender was controlled in subsequent analyses.

Likewise, before testing the hypotheses, zero-order correlation analyses among the variables of interest in the study were conducted and are presented in Table 2. Maternal depression and negative parenting practices were positively correlated, $r = .19$, $p = .04$. Positive parenting practices and parent report of adaptive behaviors were positively correlated, $r = .27$, $p = .004$. There was a marginal relation between SES and depression, $r = -.18$, $p = .06$, and between depression and parent report of adaptive functioning, $r = -.17$, $p = .06$. Likewise, positive and negative parenting practices were negatively correlated, $r = -.27$, $p = .004$, and parent and teacher reports of adaptive behaviors were positively correlated, $r = .45$, $p < .001$ (see Table 2).

The first hypothesis (that higher levels of maternal depression would be related to lower levels of adaptive behaviors in preschoolers) was examined through partial correlation analyses (controlling for child gender). After controlling for child gender, it was found that the relation between maternal depression and parent report of adaptive behaviors was marginally significant, $r = -.17$, $p = .08$, whereas the relation between maternal depression and teacher report of adaptive behaviors was not significant, $r = -.13$, $p = .16$.

The second hypothesis (that the relation between maternal depression and child adaptive behaviors would be mediated by parenting practices) and the third hypothesis (that the path between parenting practices and child adaptive behaviors would be moderated by SES) were tested through regression analyses using a moderated mediational model (Preacher, Rucker, & Hayes, 2007). A lack of a significant relation between maternal depression and adaptive behavior (i.e., no direct effect) in the partial correlation analysis meant there could be no mediation (i.e., the lack of a direct effect

precluded an indirect effect). Nevertheless, the moderated mediational models were examined, particularly to determine how positive and negative parenting practices related to the predictor (maternal depression) and the outcomes (parent and teacher report of adaptive behavior). Likewise, testing these models allowed examination of SES as a potential moderator in the link between parenting practices and adaptive behavior. To test the moderated mediational model, Hayes's PROCESS analyses were used in SPSS (Hayes, 2012). Maternal depression was the predictor, parenting practices (positive or negative) was the mediator, child adaptive behavior (parent report or teacher report) was the outcome, and SES was the moderator. For each model, child gender was entered as a control variable.

The results of each analysis were examined to determine (1) the direct effect for maternal depression on child adaptive behaviors; (2) whether maternal depression was related to parenting practices; (3) whether parenting practices were related to child adaptive behaviors, even when controlling for the variance explained by maternal depression; and (4) the indirect effect of maternal depression on child adaptive behaviors through parenting practices (which is consistent with testing for mediation; Baron and Kenny, 1986). Finally, the results of each analysis were examined to determine if a significant interaction between parenting practices and SES was found in the prediction of child adaptive behaviors (i.e., to assess for moderation). Altogether, four moderated mediational regression models were conducted for the two separate mediators (positive parenting and negative parenting) and the two separate outcomes (parent report of child adaptive behaviors and teacher report of child adaptive behaviors).

The results of the moderated mediational analyses did not support the overall hypothesized models. Not only was there no significant relation between maternal depression and adaptive behaviors, other paths of the mediational models were not supported. First, although positive parenting practices were related to child adaptive behaviors for parent report ($B = 2.81, SE = .86, p = .002$), they were not related to maternal depression; thus, there was no support of positive parenting as a mediator (see Figure 1). There were no significant paths in the moderated mediational model testing positive parenting as a mediator with child adaptive behaviors for teacher report as an outcome (see Figure 2). Second, although negative parenting practices were significantly related to maternal depression ($B = .37, SE = .18, p = .04$), they were not related to child adaptive behaviors by either informant; thus, there was no support of negative parenting as a mediator (see Figures 3 and 4). Finally, SES did not moderate the relation between positive parenting or negative parenting in predicting child adaptive behaviors, thereby failing to support the hypotheses regarding the moderation of the path between parenting practices and child adaptive behaviors. Thus, there was no support for the overall moderated mediational models. Nevertheless, the results did show interesting relations among the variables, even controlling for child gender, further bolstering the relations found in Table 2, as discussed below.

Discussion

The findings did not support the first hypothesis (that higher levels of maternal depression would be related to lower levels of adaptive behaviors). In the current study, maternal depression was not significantly related with either parent or teacher report of adaptive behaviors in preschoolers. Notably, however, the direction was as expected (a

negative correlation) but with a small effect size, and the relation between maternal depression and parent report of adaptive behaviors was marginally significant. Although the findings did not support the second hypothesis (that the relation between maternal depression and child adaptive behaviors would be mediated by parenting practices), results indicated that maternal depression was significantly related to negative parenting practices and that positive parenting practices were related with parent report of child adaptive behaviors. Finally, the findings did not support the third hypothesis (that the path in the mediational model between parenting practices and child adaptive behaviors would be moderated by SES). That is, the relation between these variables did not change with SES.

Although the moderated mediational model was not supported, there were some findings in the current study that are consistent with and build upon the current literature. First and importantly, based on these results, it appears that maternal depression does not necessarily predict a lower level of positive parenting practices, and the use of these practices could be a protective factor for children given that they do indeed positively relate to adaptive outcomes. Future research examining the interaction between maternal depression and positive parenting practices in the prediction of child adaptive behaviors could tease apart whether positive parenting practices are indeed a protective factor when maternal depression is present. Second, although maternal depression relates to negative parenting practices and previous literature shows that such negative parenting practices, in turn, relate to child behavior problems, the current study indicates that they do not appear to also minimize adaptive outcomes. Such a finding is important because it means

that children's strengths and adaptive skills can be built upon, even when faced with risk factors such as maternal depression and negative parenting practices.

The findings of the current study did not support a robust negative relation between maternal depression and child adaptive behaviors, despite the well-established findings of a positive relation between maternal depression and child psychopathology in the literature (e.g., Barry et al., 2005; Barry et al., 2009). Thus, these findings, combined with such previous literature, support the notion that child adaptive behaviors and child psychopathology are not on the same continuum but, rather, they are two distinct constructs. These findings can inform the literature as researchers examine other possible resiliency models that lead to healthy, adaptive child outcomes.

The current study's results showed a relation between positive parenting practices and parent report of child adaptive behaviors but not teacher report of child adaptive behaviors. These differential findings with parent and teacher report on child adaptive behaviors could exist for various reasons. First, the home is a more comfortable environment for the child and he/she may naturally show higher levels of adaptive skills in a comfortable environment. Second, mothers may rate their child as having higher levels of adaptive skills, because they do not have any or many other children to which to compare their child. Therefore, teachers may be a more accurate judge of the child's adaptive skills because they observe more children's adaptive behaviors and see the children in a different environment than the home. Finally, it is possible that the relation between positive parenting practices and child adaptive behaviors as reported by mothers is due to a positive response bias from the mothers. However, it is notable that these two

variables did not also negatively relate to maternal self-reports of depression. Therefore, if a response bias was present, it certainly was not uniformly influencing the findings.

Limitations and Directions for Future Research

One limitation of the current study is the young age of the participants. It can be difficult to obtain an accurate measure of some constructs, such as adaptive behaviors, in children of such a young age. In future research, findings may be different if the same model is tested with data from older children. Another limitation is that the method of collecting data was primarily parent self-report. Although teacher report data were also collected, it did not relate to the variables of interest. Future research may use direct observation of adaptive behavior to get a more accurate measure of the variables. Also, the current study was correlational in nature, so we cannot infer causation. Future research could use longitudinal research, to help confirm directionality of the relations and further support possible causality; interventions also could be used to increase adaptive skills and show causality. Finally, this study was cross-sectional and, therefore, change in the predictors of interest across time could not be examined. Future research could, again, do a longitudinal study to measure the change in skills across time.

Conclusions

Although the findings did not fully support the hypotheses, there were some interesting and informative relations among the variables. These relations could lay the foundation for future research and possible interventions to increase child adaptive behavior.

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Table 1
Descriptive Statistics of Main Variables of Interest

Variable of Interest	Min	Max	Mean	SD	Skewness	Kurtosis
Maternal Depression	.00	2.17	.23	.41	2.60	7.40
Negative Parenting Practices	-2.02	2.02	-.07	.80	.21	.20
Positive Parenting Practices	-3.23	1.66	-.002	.99	-.53	.28
Socioeconomic Status	14	66	39.89	15.15	.03	-1.13
Parent-Report Child Adaptive Behavior	23	71	49.43	8.86	-.11	-.11
Teacher-Report Child Adaptive Behavior	30	72	49.65	10.62	.36	-.92

Note. Min = minimum; Max = maximum; SD = standard deviation.

Table 2

Correlations Among Variables of Interest

Variable of Interest	1	2	3	4	5	6
1. Maternal Depression	--					
2. Negative Parenting Practices	.19 *	--				
3. Positive Parenting Practices	-.11	-.27 **	--			
4. Socioeconomic Status	-.18 [†]	-.11	.14	--		
5. Parent-Report Child Adaptive Behavior	-.17 [†]	-.09	.27 **	.06	--	
6. Teacher-Report Child Adaptive Behavior	-.14	-.07	-.01	.10	.45***	--

[†] trend; $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

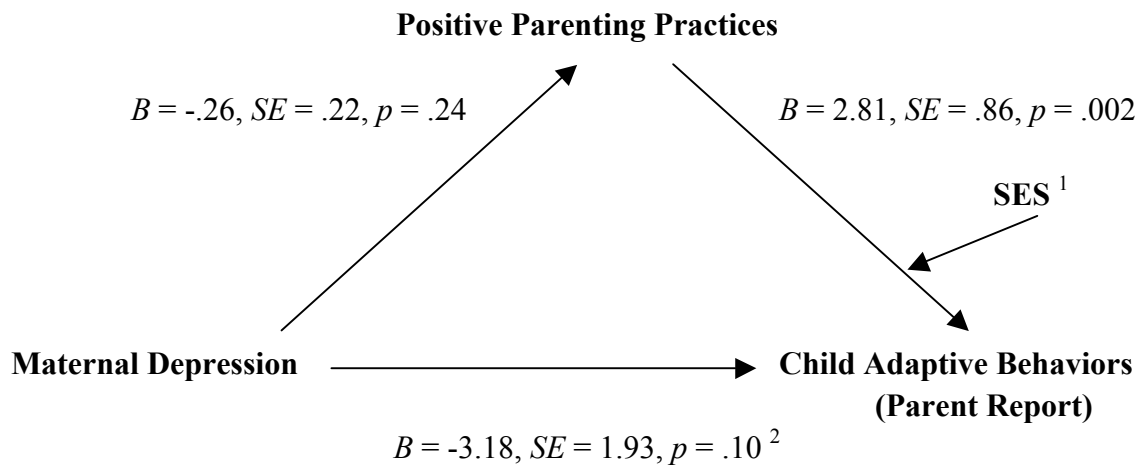


Figure 1. Moderated mediational analysis of positive parenting practices as a mediator of the relation between maternal depression and parent report of child adaptive behaviors.

Note. All regression analyses are controlling for child gender.

¹ In a moderated mediational model, SES was examined as a moderator in the relation between parenting and child adaptive behaviors. SES did not significantly predict child adaptive behaviors when all other variables were controlled, $B = -.02, SE = .05, p = .74$, nor did it moderate the relation between positive parenting practices and child adaptive behaviors, $B = .06, SE = .06, p = .32$.

² Non-significant indirect effect based on bootstrapping analytical strategy with 20,000 resamples (Preacher et al., 2007) yielded confidence limits of -3.83 to .52, thus not significantly different from 0.

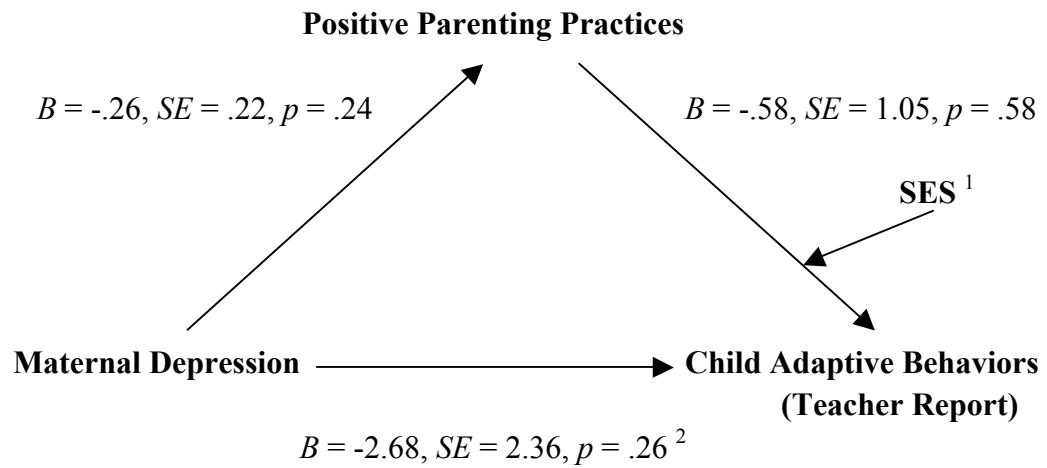


Figure 2. Moderated mediational analysis of positive parenting practices as a mediator of the relation between maternal depression and teacher report of child adaptive behaviors.

Note. All regression analyses are controlling for child gender.

¹ In a moderated mediational model, SES was examined as a moderator in the relation between parenting and child adaptive behaviors. SES did not significantly predict child adaptive behaviors when all other variables were controlled, $B = .04, SE = .06, p = .50$, nor did it moderate the relation between positive parenting practices and child adaptive behaviors, $B = -.07, SE = .07, p = .29$.

² Non-significant indirect effect based on bootstrapping analytical strategy with 20,000 resamples (Preacher et al., 2007) yielded confidence limits of $-.34$ to 2.15 , thus not significantly different from 0.

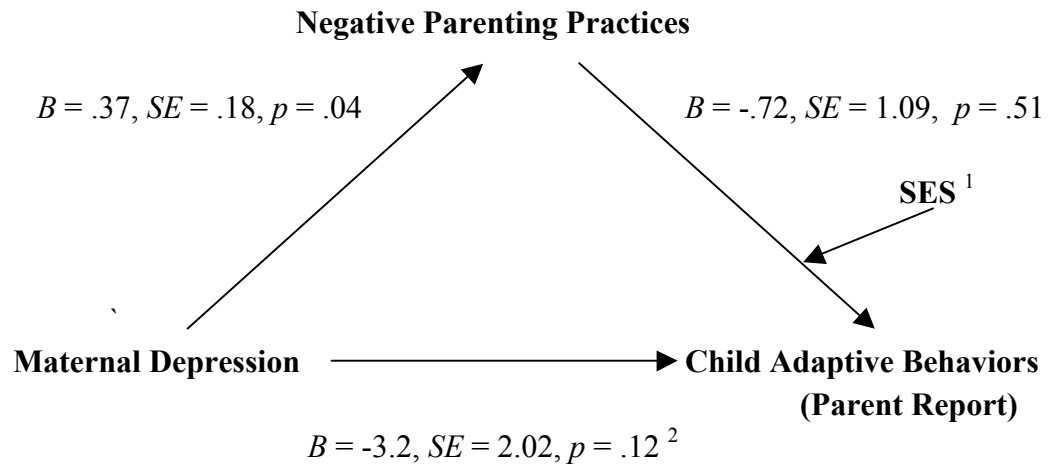


Figure 3. Moderated mediational analysis of negative parenting practices as a mediator of the relation between maternal depression and parent report of child adaptive behaviors.

Note. All regression analyses are controlling for child gender.

¹ In a moderated mediational model, SES was examined as a moderator in the relation between parenting and child adaptive behaviors. SES did not significantly predict child adaptive behaviors when all other variables were controlled, $B = .007, SE = .05, p = .90$, nor did it moderate the relation between positive parenting practices and child adaptive behaviors, $B = -.05, SE = .08, p = .53$.

² Non-significant indirect effect based on bootstrapping analytical strategy with 20,000 resamples (Preacher et al., 2007) yielded confidence limits of -1.43 to .45, thus not significantly different from 0.

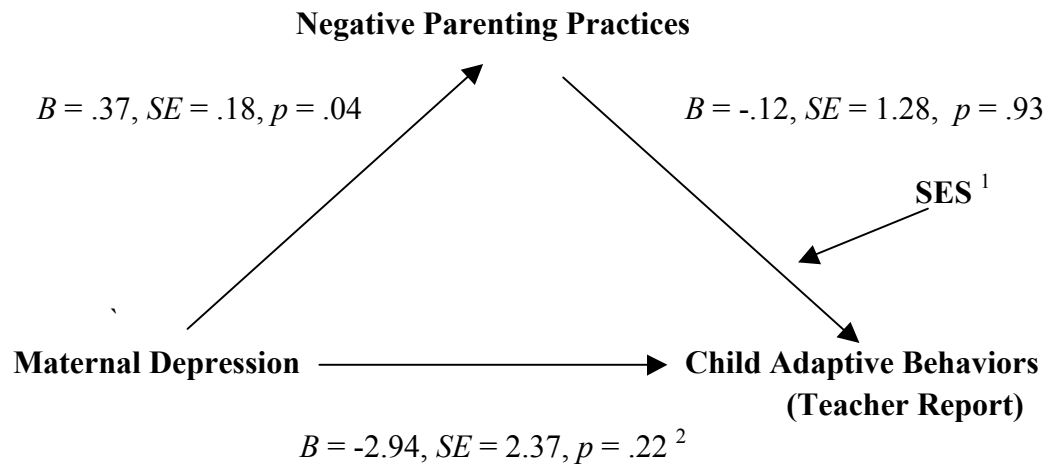


Figure 4. Moderated mediational analysis of negative parenting practices as a mediator of the relation between maternal depression and teacher report of child adaptive behaviors.

Note. All regression analyses are controlling for child gender.

¹ In a moderated mediational model, SES was examined as a moderator in the relation between parenting and child adaptive behaviors. SES did not significantly predict child adaptive behaviors when all other variables were controlled, $B = .04, SE = .06, p = .58$, nor did it moderate the relation between positive parenting practices and child adaptive behaviors, $B = .04, SE = .09, p = .70$.

² Non-significant indirect effect based on bootstrapping analytical strategy with 20,000 resamples (Preacher et al., 2007) yielded confidence limits of -1.15 to 1.13, thus not significantly different from 0.